



The Transtheoretical Model and Exercise during Pregnancy

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Background

- ❖ **Exercise during pregnancy (EDP) research reveals no adverse effects to mother or baby**
- ❖ **Revised ACOG guidelines recommend EDP in low risk pregnant women.**
- ❖ **ACSM recommends EDP & recognizes pregnancy as a prime time for adoption of healthy lifestyle habits**



BENEFITS SPECIFIC TO EDP

❖ **Psychological:**

**Increased maternal well being,
improved self-esteem & body
image**

❖ **Physiological:**

**Fewer discomforts of pregnancy
& increased physical fitness**



PREVALENCE OF EDP

- ❖ **Only 5-10% of U.S. women**
- ❖ **Research Studies**
 - ✓ **Clapp (1996)**
 - ✓ **Zhang & Savitz (1996)**
 - ✓ **Schramm, Stockbaur, & Hoffman, (1996)**
 - ✓ **Lee (1996)**



Problem

- ❖ **Despite positive outcomes, minimal success of promoting EDP**
- ❖ **Research needed to understand how to promote EDP**
- ❖ **Limited *theoretically based* research & interventions for the promotion of EDP**



STUDY PURPOSE

To examine the application of the TTM including stages of change, self-efficacy, & decisional balance (pros and cons) to exercise behavior among low risk pregnant women.



The Transtheoretical Model of Behavior Change (TTM)

- ❖ **Stages of Exercise**
- ❖ **Self-efficacy**
- ❖ **Decisional Balance
(pros & cons)**

(Prochaska & DiClemente, 1983)



EDP & SOE

- ❖ **Regular exercise: mod intensity ≥ 20 min 3x/wk or more**
- ❖ **SOE (Prior to & during pregnancy)**
 - ✓ **Precontemplation (no intention)**
 - ✓ **Contemplation stage (in 6 mo)**
 - ✓ **Preparation stage (in 30 days)**
 - ✓ **Action stage (< 6 mo)**
 - ✓ **Maintenance stage (≥ 6 mo)**



Exercise Self-efficacy

Degree of confidence pregnant women believe they can exercise when tired, feeling **moody, out of time, on vacation, when raining or snowing, **with morning sickness, with added wt of pregnancy, when others staring, and when feeling others may disapprove of her EDP.****



Decisional Balance for Exercise (DBE)

- ❖ **Relative weighing of pros & cons of engaging in EDP**
- ❖ **Pros - perceived positive aspects or facilitators for EDP**
- ❖ **Cons - perceived negative aspects or barriers to EDP**



Research Questions

- 1. What is the relationship between pregnancy SOE and ESE and EDB (pros & cons)?**
- 2. Are the ESE scores differentiated by SOE behavior?**
- 3. Are the EDB (pros & cons) scores differentiated by SOE behavior?**
- 4. Is there a relationship between SOE prior to pregnancy and SOE during pregnancy?**



Method/Design

- ❖ **Descriptive cross-section design**
- ❖ **4 self-report questionnaires (quantitative)**
 - ✓ **Demographics**
 - ✓ **Stage of Exercise Questionnaire**
 - ✓ **Exercise Self-efficacy Scale**
 - ✓ **Decisional Balance Scale**



SAMPLE

- ❖ **Convenience sample of low-risk pregnant women (N = 195) from two OB sites**

Inclusion criteria:

- ✓ **12 - 28 wks gestation**
- ✓ **18 - 42 yrs,**
- ✓ **Single fetus**
- ✓ **Speak, read, & understand English**
- ✓ **No chronic dz or functional limitation**
- ✓ **EDP not prohibited by HCP**
- ✓ **Attended 1st prenatal visit with HCP**



Demographics

Age: 18-25 (29%), 26-35 (59%), 36-42 (12%)

Gestation of 12-28 wks (mean = 23)

Euro-American (71.3%)

College educated (79%)

Income > 30,000 (77.4%)

Living with SO (91.8%)

Not 1st pregnancy (63%)

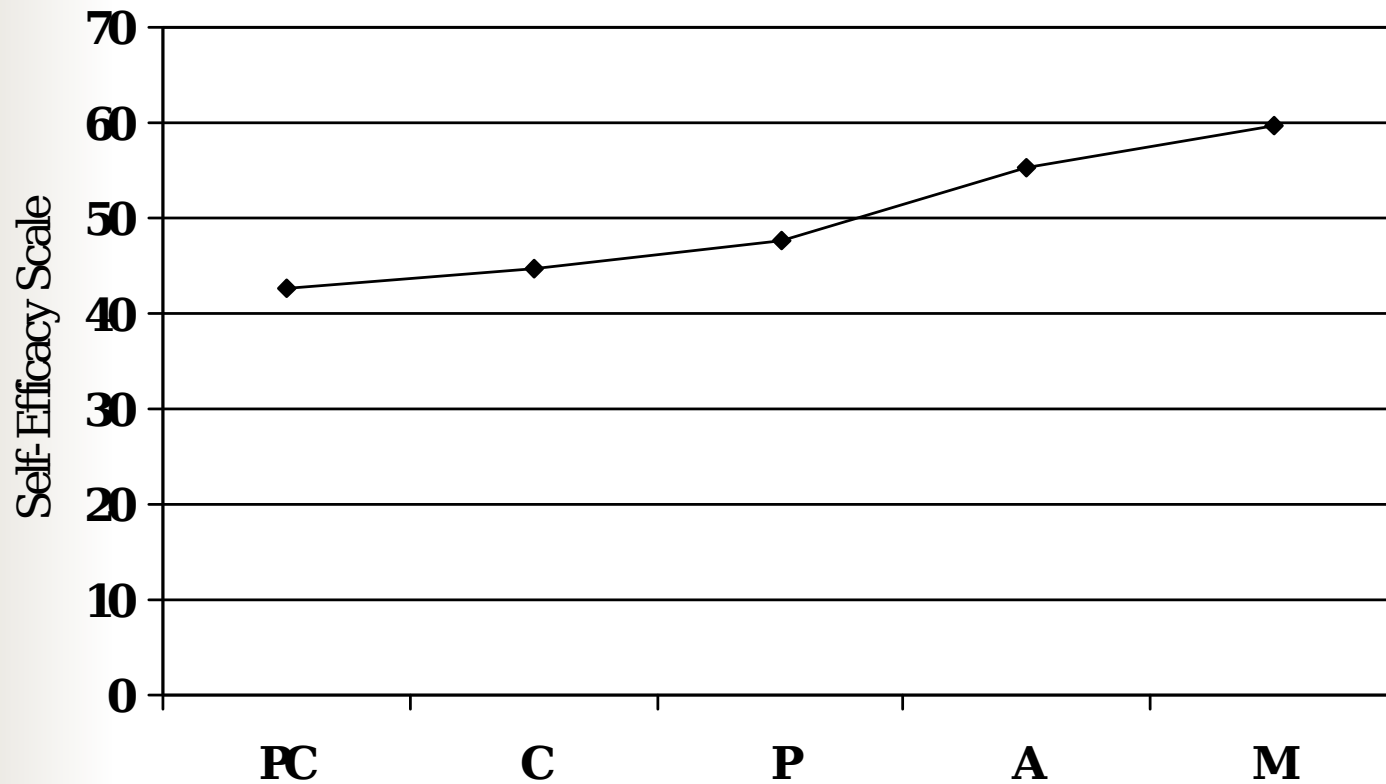
1 or more children at home (73%)



ESE Results

- ❖ **ESE was significantly related to SOE during pregnancy ($p < .001$).**
- ❖ **ESE reliably differentiated women by SOE during pregnancy $p < .001$.**
- ❖ **Positive linear relationship between SOE and ESE**

ESE & SOE Mean (pregnancy)

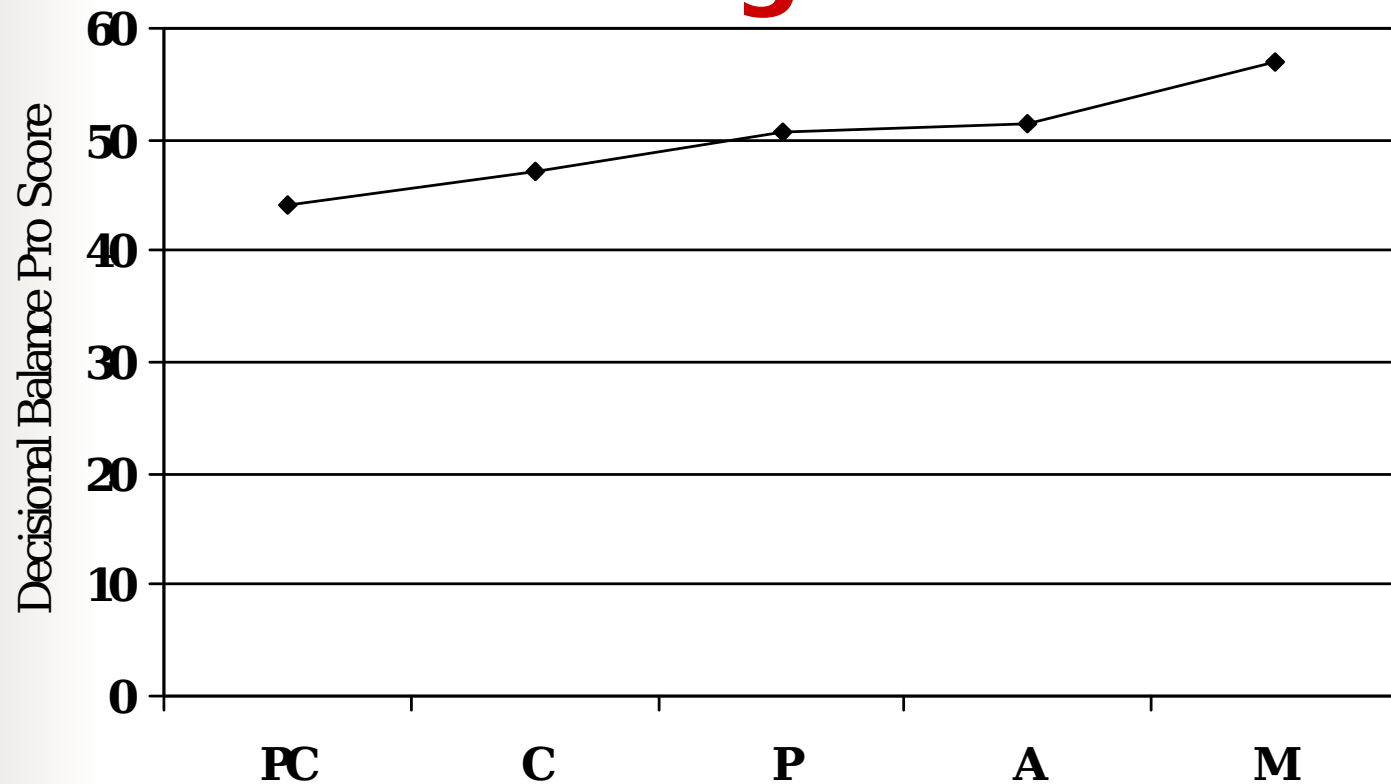




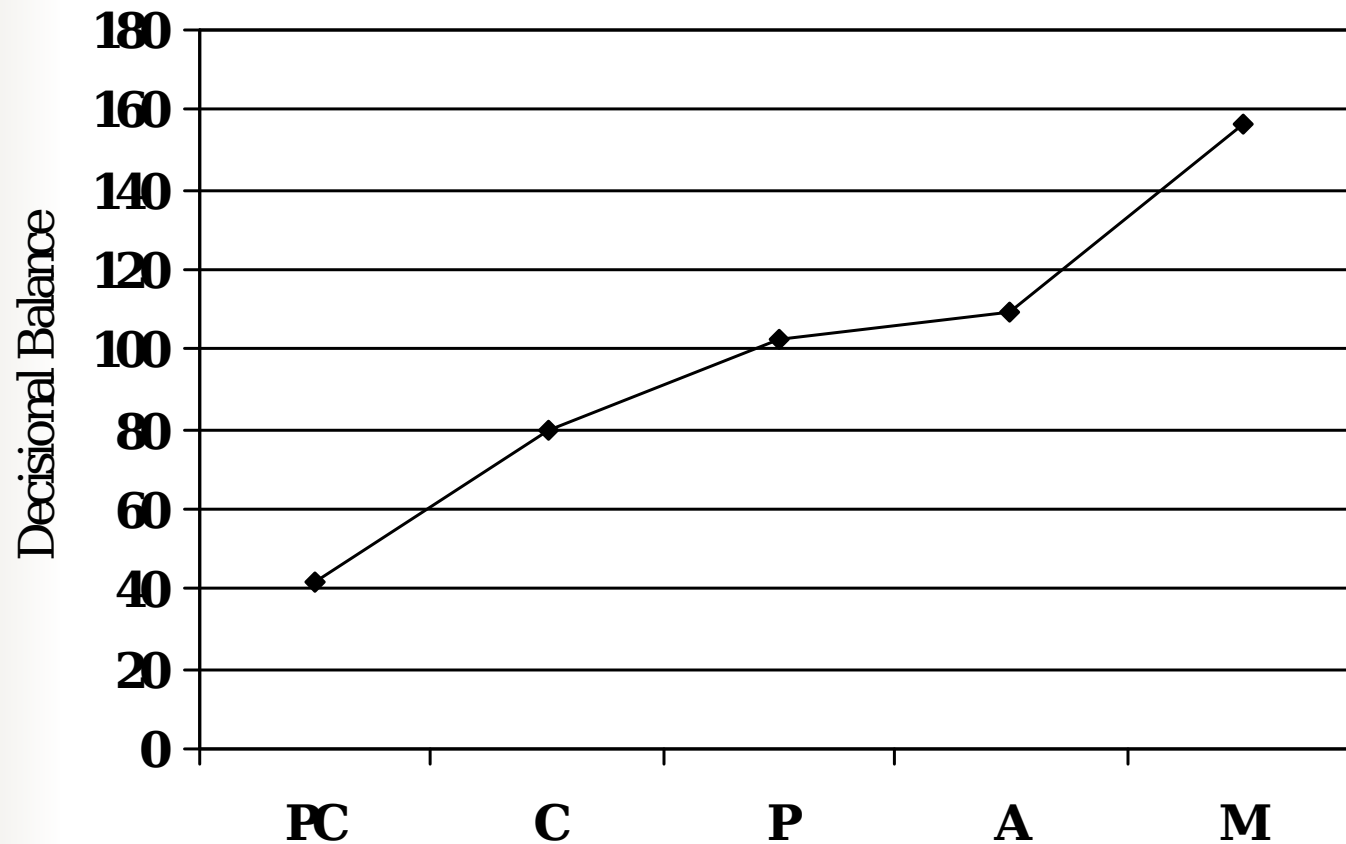
EDB

- ❖ **EDB, pros & cons were significantly r/t SOE during pregnancy ($p < .001$).**
- ❖ **EDB, pros, & cons were reliably differentiated by SOE during pregnancy $p < .001$.**
- ❖ **Crossover for pros and cons was just before the Preparation stage**

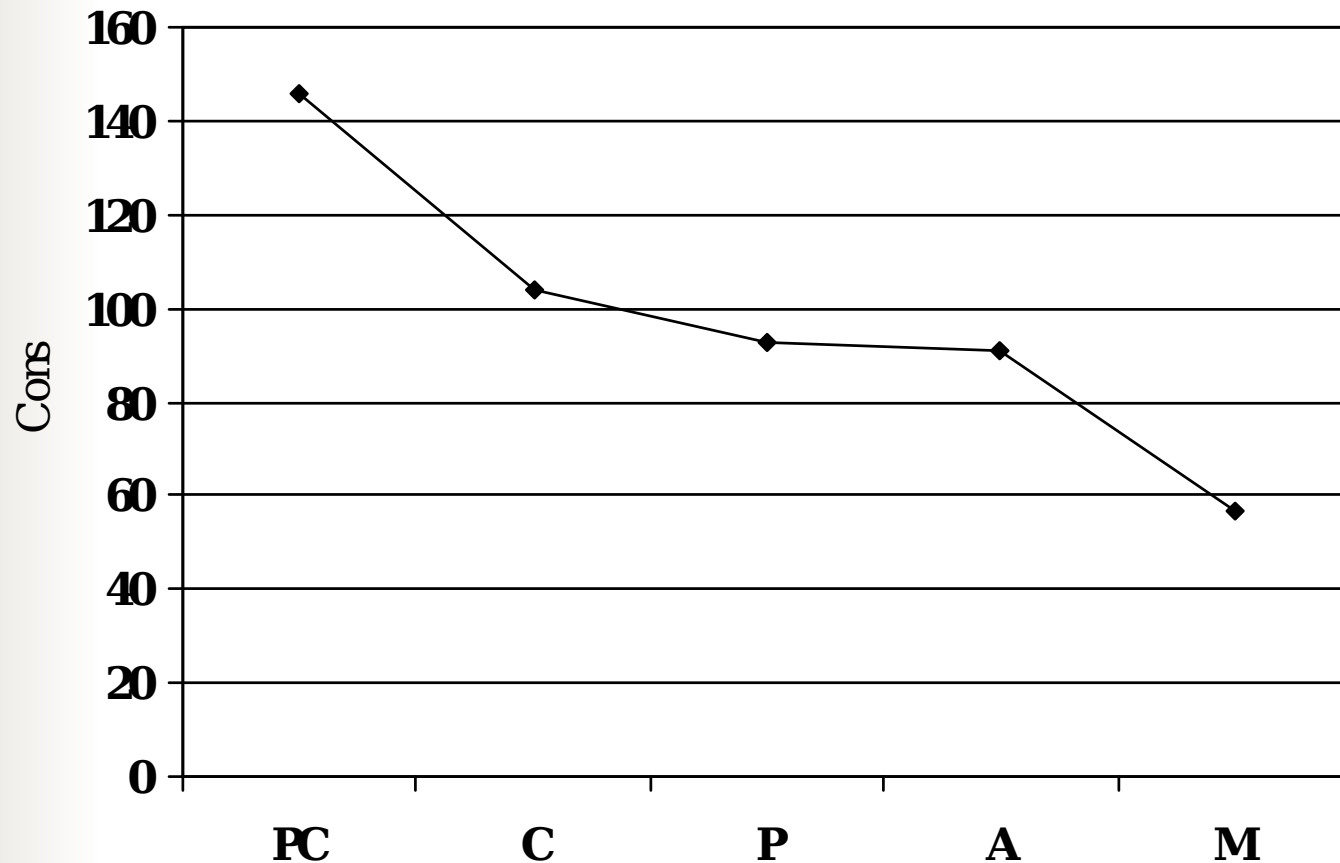
Mean of Decisional Balance Pro Scale for Pregnancy Exercise Stage



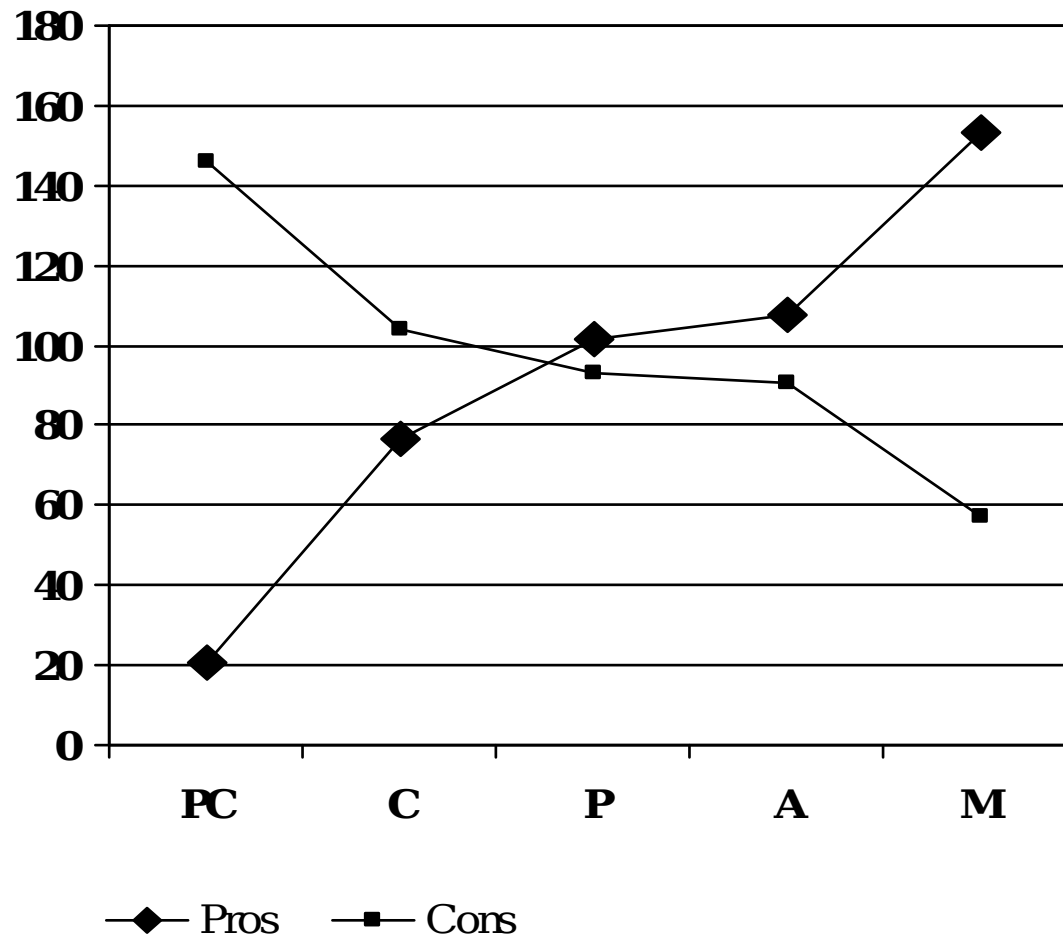
Mean Rank Pregnancy SOE & EDB



Mean Rank Pregnancy Stage of Exercise and Cons



Mean Rank Crossover Pattern for the Pros & Con Scales by SOE





PREPREGNANCY & PREGNANCY SOE

- ❖ **Pre-pregnancy SOE was significantly R/T SOE during pregnancy ($p < .001$)**
- ❖ **Largest % in prepregnancy SOE remained in same SOE during pregnancy.**
- ❖ **43% Maintenance & 54.3% Action of pre-pregnancy groups stopped exercising.**



Recommendations

- ❖ **Prospective/longitudinal studies**
- ❖ **Diverse samples including pregnant military women**
- ❖ **Use Objective measures**
- ❖ **Intervention studies**



Contribution to Nursing Science

- ❖ **Represents 1st study to apply the TTM for the study of exercise in a low risk pregnant population.**
- ❖ **The ESE and EDB scales were modified exclusively to meet the unique psychosocial and physiological changes of pregnant women.**



Implications

- ❖ **Preliminary support for utilization of the TTM to:**
 - ❖ **Identify exercise determinants unique to pregnant women**
 - ❖ **Design & implement efficacious strategies/interventions to promote EDP**



Military Application

Actual numbers of military women who continue to EDP is unknown, but anecdotal reports show that the majority will discontinue exercising regularly.

Keeping pregnant military women in shape is especially important, because physical fitness within a brief time frame after delivery is a readiness expectation.